

REMARKS / AGRUMENTS

Applicant(s) respectfully traverse this rejection for the reasons set out below, and ask the Examiner for reconsideration.

Summary of the Office Action

Claims 106-109 stand rejected under 35 U.S.C. §101 as allegedly being directed to non-statutory subject matter.

Claims 1, and 106-109 stand rejected under §112, second paragraph.

Claims 1-39, and 54-91 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Zhang et al. (U.S. patent 6,891,854).

Claims 40-53, and 92-109 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Zhang et al. (U.S. patent 6,795,506).

Claim amendment

Claims 1 and 54 were amended to clarify the difference between the subject matter of U.S patent application 10/693,509 and between U.S. patent 6,891,854 of Zhang et al.

The subject matter of claim 2 was incorporated into the currently amended claim 1, and so claim 2 was canceled.

The subject matter of claim 55 was incorporated into the currently amended claim 54, and so claim 55 was canceled.

Claims 110 and 111 were added, to further clarify the difference between the subject matter of U.S patent application 10/693,509 and between U.S. patent 6,891,854 of Zhang et al.

Claim 106-109 were deleted without prejudice.

No new matter is introduced by this amendment.

Response to the 35 U.S.C. §102(e) rejection of claims 1-39, and 54-91

Claims 1-39, and 54-91 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Zhang et al. (U.S. patent 6,891,854).

Regarding claim 1, the examiner argues that in U.S. patent 6,891,854 of Zhang et al. (referred to in this section as Zhang ('854)), Zhang discloses a method for generating a multiplex of media streams (**Figs 2A-4, and Fig 7, col 6, lines 28-63**), the method comprising: receiving a set of media streams that comprises first type media stream components (**Video Bitstream 1 of Fig 7**) and second type media stream (**Data Stream of Fig 7**) components (**col 13, lines 59-67, col 14, lines 1-17**); applying a modification process (**item 704 of Fig 7**) that is not adapted to modify second type media stream components, such as to provide at least one modified first type media stream component (**col 14, lines 20-24**); and multiplexing (**item 706 of Fig 7**) at least the second type media stream components and the modified first type media stream components (**col 14, lines 25-37**).

Claim 1 was amended to include the limitation wherein each of multiple media streams of the set of media streams comprises both first type media stream components and second type media stream components; as well as the limitation of the now canceled claim 2, wherein the second type media stream packets are encrypted so as not to facilitate their modification by the modification process.

The applicant respectfully maintains that Zhang ('854) does not disclose the method of claim 1. According to the examiner, the receiving according to Zhang ('854) includes the receiving of the first type media stream components which are the media stream components of video bitstream 1 illustrated in Fig 7 of Zhang ('854), and of the second type media stream components which are the media stream components of the data stream illustrated in Fig 7 of Zhang ('854).

It should be noted that the data stream includes no video type media stream components that can undergo the modification process applied onto the media stream components of video bitstream 1 according to Zhang ('854), while video bitstream 1 includes only video type media stream components that are encoded to be modified (according to col 5, lines 5-8 of Zhang ('854), referred to by the examiner in relation to the second limitation added to the currently amended claim 1).

Thus, the different streams of Zhang ('854) do not comply with the limitation wherein each of multiple media streams of the set of media streams comprises both first type media stream components and second type media stream components.

Referring to the second limitation added to the currently amended claim 1, wherein the second type media stream packets are encrypted so as not to facilitate their modification by the modification process, it is noted that while only video data is encoded to be modified (as argued by the examiner in relation to the currently canceled claim 2 that included this limitation now incorporated into independent claim 1), this does not imply that the packets of the data stream are encrypted so as not to facilitate their modification by the modification process.

It should be noted that while encoding the video bitstream of Zhang ('854) includes substantially transforming modified video information from a decoded format (which is easy to modify and manipulate during the modifying of the extracted data) into another format (that is easier for transmission over channel 708), nowhere in his disclosure does Zhang ('854) teaches or suggests the any media stream components are encrypted (i.e. transformed using a cipher algorithm so as to make it unreadable to anyone except those possessing a decryption key). It should be noted (e.g. as exemplified in paragraph 0014 of the background) that encryption is used for media streams e.g. for allowing only specific viewers to watch transmitted streams, by utilizing conditional access apparatuses and methods, that scramble information and/or encrypt it, wherein encryption keys are also sent to conditional access devices, such as those that are included within client devices, to enable decryption of the media streams.

As explained in the application, encrypted media stream components are encrypted in a way that obstructs their modification by the modification process,

because the information that is required for a successful carrying out of the modification process is usually also encrypted, and thus can not be utilized without initially decrypting the media stream components, in a way that is relatively slow, costly, and requires a decryption key that may not be available to the unit carrying out the modification process.

Thus, Zhang ('854) neither teaches nor suggests wherein the second type media stream packets are encrypted so as not to facilitate their modification by the modification process.

Therefore, Zhang ('854) does not teach a method for generating a multiplex of media streams that comprises: receiving a set of media streams that comprises first type media stream components and second type media stream components, wherein each of multiple media streams of the set of media streams comprises both first type media stream components and second type media stream components; applying a modification process that is not adapted to modify second type media stream components, so as to provide at least one modified first type media stream component; wherein the second type media stream packets are encrypted so as not to facilitate their modification by the modification process; and multiplexing at least the second type media stream components and the modified first type media stream components.

Therefore, claim 1 should be allowed.

As claim 54 was amended to include similar limitations to those added to claim 1, claim 54 should also be allowed.

Claims 3-39, and 110, which depend on claim 1, as well as claims 56-91, and 111, which depend on claim 54, should also be allowed.

As for claims 8 and 62, the examiner argues that Zhang ('854) disclosed wherein the step of modifying comprises executing modification sessions in a periodical manner, and referred to rate controller 512 of Zhang ('854) and to col. 11 lines 47-54.

The applicants respectfully disagrees. Firstly, it should be noted that while according to the invention of the applicants the receiving may include receiving media streams constantly, the modifying may be, according to an embodiment of the invention, may be carried out in modification sessions by conveniently executing the modification process on one group of media stream components at a time. The group may include, as exemplified in paragraph 0054, media stream components that are received during a certain time period, media stream components that are supposed to be transmitted during a certain time period, a group that includes a certain amount of media stream components and the like.

In comparison, rate controller 512 of Zhang ('854) is taught to control the bit rate at which the **transport multiplexer 528 outputs data** (by preferably determining the bit usage of each video frame so that the resulting output bit stream maintains a desired bit rate profile), wherein the rate control is performed for example by adjusting the quantization factor embedded in the video bit stream. The rate controller 512 however, can not define a group of media stream components (or alternatively a distinctive time period during which such media stream components are received or should be transferred), onto which the modifying process is carried out separately. No modification session are taught by Zhang ('854), but rather the modifying is described as an ongoing process, wherein the modification is only responsive to a desired **bit-rate**.

Therefore, claims 8 and 62 should be allowed.

Claims 9-15 and 63-69, which depend on claims 8 and 62 respectively should also be allowed.

Regarding claims 18 and 72, the examiner argues that Zhang ('854) disclosed wherein the determination is followed by selecting an encrypted version of media stream out of multiple distinct encrypted versions.

It is noted that Zhang ('854) refers to the process of modifying (e.g. in the passage referred to by the examiner), while the media streams of the referred claims

are the received media streams (see for example paragraph 0073). Additionally, as aforementioned, Zhang ('854) does not discuss encrypted media streams.

Therefore, claims 18 and 72 should be allowed, as well as claims 19, 20, 73, and 74, that depend on claims 18, 72.

As for claim 54, the examiner argues that Zhang ('854) discloses

an apparatus for generating a multiplex of media streams, the apparatus (**Fig 8**) comprising: an interface, for receiving a set of media streams that comprises first type media stream components and second type media stream components (**items 802-806 of Fig 8**); a statistical multiplexing unit (**item 808 of Fig 8**) for applying a modification process (**col 14, lines 38-42**), that is not adapted to modify second type media stream components, such as to provide at least one modified first type media stream component (**col 14, lines 62-67, col 15, lines 1-12**), and for multiplexing at least the second type media stream components and the modified first type media stream components (**col 15, lines 13-17**).

The applicant respectfully disagrees. In addition to the arguments offered above (in relation to claim 1, and elsewhere), even when interpreting Zhang ('854) in relation to Fig 8 and not to Fig 7, it is noted that different types of media streams components referred to by the examiner pertain to media stream components of the different streams. Thus, clearly, Zhang ('854) does not teach the limitation wherein each of multiple media streams of the set of media streams comprises both first type media stream components and second type media stream components. As discussed above, Zhang ('854) does not teach either the limitation wherein the second type media stream packets are encrypted so as not to facilitate their modification by the modification process.

Therefore, claim 54 should be allowed, as well as claims 56-91, and 111, that depend onto claim 54.

Response to the 35 U.S.C. §102(e) rejection of claims 40-53, and 92-109

Claims 40-53, and 92-109 stand rejected under 35 U.S.C. §102(e) as allegedly being anticipated by Zhang et al. (U.S. patent 6,795,506).

Regarding claims 40 and 92, the examiner argues that in U.S. patent 6,795,506 of Zhang et al. (referred to in this section as Zhang ('506)), Zhang discloses a method for partially encrypting a media stream (**item 60 of Fig 38**), the method comprising the steps of: receiving a media stream (**col 13, lines 3-13**); converting the media stream to multiple layers (**col. 15, lines 36-51, Fig 4A**); and encrypting at least a portion of at least one layer (**encoding process of bitstreams, col. 15, lines 52-55**).

The applicant respectfully disagrees as Zhang ('506) does not discuss encryption of neither media streams nor of layers, but merely of encoding of video data to comply with the video format implemented. It should be noted that while encoding the video bitstream of Zhang ('506) includes substantially transforming modified video information into another format, and that nowhere in his disclosure does Zhang ('506) teach or suggest the any media stream components or layers are encrypted (i.e. transformed using a cipher algorithm so as to make it unreadable to anyone except those possessing a decryption key). It should be noted (e.g. as exemplified in paragraph 0014 of the background) that encryption is used for media streams and layers thereof e.g. for allowing only specific viewers to watch transmitted streams, by utilizing conditional access apparatuses and methods, that scramble information and/or encrypt it, wherein encryption keys are also sent to conditional access devices, such as those that are included within client devices, to enable decryption of the media streams.

Therefore, claims 40 and 92 should be allowed.

Claims 41-46 and 93-98, that depend onto claims 40 and 92 respectively, should also be allowed.

Generally referring to claims 50-53, and 92-105, the applicant is of the opinion that the layers of Zhang ('506) do not correspond to the layers referred to in the invention. That is, while all of the layers generated from the media stream are media layers, that include media information, the layers of Zhang ('506) are protocol layers,

wherein all but one layer (which does contain media information) are overhead layers, that includes information used for the transmission of the media information (such as packet headers, etc.), but do not include media information other than the media information of the single layer aforementioned.

Comparatively, according to the invention, multiple layers may be different representations of a single media stream (see for example paragraph 0078), which differ by different parameters (such as quality, size, etc.). Using this model of layers, one can transmit one layer, and not the other (e.g. due to bandwidth considerations), while still conveying the media stream (even if in a lesser quality). Since the layers of Zhang ('506) are hierarchical protocol layers, they have to be transmitted together, while a higher protocol layer facilitates the transmission of a lower layer, that depends on the higher level for transmission.

As for claims 41 and 93, the examiner argues that Zhang ('506) discloses wherein the step of encrypting comprises encrypting a portion of at least one layer while not encrypting at least one other layer. The applicant argues that since Zhang ('506) teach of encoding, but not of encryption, claims 41 and 93 should be allowed.

As for claims 42 and 94, the examiner argues that Zhang ('506) discloses wherein the multiple layers comprise base layer (**elementary layer**) and at least one quantized layer (**transport layer, col. 15, lines 39-51, Fig 4A**).

As indicated in paragraph 0080 of the application, for example, the converting of the media stream to multiple layers may include quantizing the media stream according to multiple quantization levels to provide multiple quantized layers, wherein the most coarsely quantized representation of the media stream is defined as a base layer. It is clear to a person who is skilled in the art that the transport layer is not a created by quantizing the media stream according to a quantization layer, and thus can not be considered a quantized layer. Likewise, the elementary layer is not generated using a coarser quantization level than the transport layer, and as such can not be a base layer for which.

Therefore, claims 42 and 94 should be allowed.

As for claims 43 and 95, the examiner argues that Zhang ('506) discloses wherein the multiple layers comprise a base layer (**elementary layer**) and at least one supplemental layer (**packetized elementary layer, col. 15, lines 45-51, Fig 4A**). Referring again for example to paragraphs 0038 and 0080, it is noted that a supplemental layer is produced for each successive pair of said quantized layers. Referring to Zhang ('506), it is clear that the PES layer may comprise a single quantized media information, but may not be produced of a successive pair of quantized layers, and thus can not be a supplemental layer.

As to claims 44-45, and 96-97, the examiner argues that Zhang ('506) discloses wherein the multiple layers provide spatial scalability and wherein the layers provide temporal scalability (**col. 8, lines 4-14**).

While the pre-compression information discussed by Zhang ('506) may include image spatial complexity and temporal complexity, Zhang ('506) does not discuss whatsoever scalability, for which the different multiple layers should provide either spatially different or temporally different information pertaining to the same media stream. Thus, implementing more layers or layers of larger bit-rate (for example), will allow to process a better quality representation of the same media stream. This is not facilitated by the invention of Zhang ('506), and thus scalability is not supported by which.

As indicated in paragraph 0039, according to an embodiment of the invention at least one media stream of the multiple media streams is processed to provide spatial resolution scalability. Thus, the media stream is represented by multiple layers that may be reconstructed to provide media stream of varying spatial resolution. Likewise, the media stream may be represented by multiple layers that may be reconstructed to provide media stream of varying temporal resolution.

Therefore, claims 44-45, and 96-97 should be allowed.

As for claims 47 and 99, the applicant could not see the conjunction between independent claims 47 and 99 to dependent claims 46 and 98 that depend onto other claims, as made by the examiner in relation to claims 46-47 and 98-99.

However, since Zhang ('506) do not disclose encryption whatsoever, clearly he does not disclose a method for partially encrypting a media stream, the method comprising the steps of: receiving multiple layers that represent a media stream and encrypting at least a portion of at least one layer.

Therefore, claims 47 and 99 should be allowed.

Claims 48-53, and 99-105, that depend on claims 47 and 99, should also be allowed. It is noted that the arguments offered in relation to claims 40-47 and 92-98 are also applicable for the respective claims of 48-53, and 99-105.

Conclusion

The applicant believes that in view of these arguments claims 1, 3-54, 55-105, 110 and 111 should be allowed.

Respectfully submitted,

Date: 6/6/08

/Oren Reches/

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